

FAMILY FOREST FISH PASSAGE PROGRAM

Completing Evaluation Forms

Purpose of Forms

The Family Forest Fish Passage Program provides financial and technical assistance to family forest landowners who have fish barriers on their forestlands. By enrolling in the program, a landowner is relieved of Forest Practices obligations to fix applied for fish barriers until the state determines the barriers are high priority. Three forms are used to evaluate projects for the Program. These are the Barrier Evaluation Form (BEF), Expanded Barrier Evaluation Form (EBEF), and Correction Analysis Form (CAF). The forms document information on fish passage barriers submitted to the Program. The Fish Passage Team, a core group of staff from the Washington Department of Natural Resources (DNR), Washington Department of Fish and Wildlife (WDFW) and Interagency Committee for Outdoor Recreation/ Salmon Recovery Funding Board (IAC), uses information from the completed forms to prioritize projects for funding.

No substitute for local knowledge – how you can help

Local help in providing project information is greatly appreciated. The best information sources are landowners and local staff living or working in a particular watershed. A broad range of field staff may complete forms, including conservation districts, DNR, WDFW, tribes, regional fisheries enhancement groups, and others. Not all forms need to be completed at the same time or by the same person. WDFW coordinates data collection for completing forms. Generally, these forms are used in a step-wise fashion. To avoid duplication of effort, please fill out forms when requested. Please read these instructions for information on how and when to collect and record data.

Application Processing

After the landowner signs up for the program, a site evaluation determines if a structure is a fish passage barrier. The BEF is used for this determination. It provides basic information to identify the location, landowner, evaluator and the barrier measurements. WDFW criteria are used to determine barrier status. The evaluator should have professional training to make the assessment.

Next, the EBEF is completed, providing local watershed information. This includes locations of other barriers, fish use at the site, and a description of the habitat that will be made available by the barrier correction.

The CAF is used for those projects which represent potential significant habitat gain, based on review of the BEF and EBEF. This form provides additional site analysis, correction options, and cost estimate to correct the barrier. A professional field biologist or engineer with experience in fish passage design and implementation should fill out this form. The cost estimates and correction options are used, along with the BEF and EBEF, to set funding priorities.

DNR selects projects for funding based on the recommendations from the Fish Passage Team and the Program Steering Committee, made up of representatives from the three agencies and the Washington Farm Forestry Association.

How to Get More Information

If you have questions or need assistance in completing these forms, please contact the Fish Passage Team. Primary contacts are Brett DeMond, WDFW (360) 902-2550; Brian Abbott, IAC (360) 902-2638; and Scott Potter, WDNR (360) 902-1404.

Guidelines describing the Program in more detail are available from the above contacts or on-line at: http://www.iac.wa.gov/Documents/SRFB/Grants/FFFP_Program/fffp_guidelines.pdf

Barrier Evaluation Form Instructions

HOW TO FILL OUT THIS FORM - Following are definitions, descriptions, and standards for information to be included in the Barrier Evaluation Form. Three types of Barrier Evaluation Forms are available. These are for a single culvert at a road crossing, multiple culverts at a road crossing, and dams.

LOCATION INFORMATION –

Project Name: Use the landowner's last name followed by the creek name. If more than one site per landowner is evaluated on the same creek, designate each site with a letter, e.g. Franklin – Boulder Creek A.

IAC/SRFB Project #: Provided by WDFW when requesting the BEF, this number is used to track projects in IAC/SRFB's PRISM database.

Other Location Information: Please provide the Forest Practice Application (FPA) number and the Hydraulic Project Approval tracking number for the existing culvert if available. If a new FPA has been applied for, include this also. Describe the barrier location including GPS coordinates in decimal degrees using state plane coordinates, Washington South NAD27, stream name, the tributary it flows into, Watershed Resource Inventory Area number, and stream number (available from WDFW) as well as detailed driving directions to the site.

LANDOWNER INFORMATION - Provide landowner contact information. If the landowner is working through a consultant or other party, please provide contact information.

EVALUATOR INFORMATION – Provide contact information for the person(s) assessing the site.

BARRIER INFORMATION - All measurements should be in meters.

Is the stream fish-bearing? If unknown, DNR or WDFW will determine fish-bearing status. Generally, if a stream is 2 feet or greater in width in western Washington (3 feet or greater in eastern Washington) with a gradient of 20 percent or less, it is considered fish-bearing, even if it is dry in summer.

Is this culvert a fish passage barrier? This is concluded from the collected data, according to WDFW Level A assessment protocol*.

Culvert shape: Describe culvert shape (round, box, arch, squash, elliptical, bottomless, or other).

Culvert material: Describe culvert material (precast concrete – PCC; corrugated steel – CST; corrugated aluminum – CAL; cast-in-place concrete – CPC; structural plate steel – SPS; smooth steel – SST; plastic – PVC; structural plate aluminum – SPA; timber – TMB; masonry – MRY; other – OTH; (may be 2 different materials joined end to end).

Culvert size: *Diameter:* measure inside diameter for circular culverts.

Rise: measure inside dimension from culvert invert to crown of non-circular culverts.

Span: measure the inside maximum width of culvert for non-circular culverts.

Water depth in culvert: Measured at downstream end, about 6 inches inside culvert.

Outfall drop: Measure difference between water surface inside culvert and water surface of plunge pool.

Culvert length: Measure culvert length including aprons if present.

Culvert slope: Measure the vertical difference between culvert invert elevations at inlet and outlet. Divide this value by the culvert length (including aprons) and multiply by 100. If slope varies within culvert, provide the overall measurement and make a note in comments with maximum slope and length of the maximum slope. Indicate which tool was used to determine culvert slope (laser level, transit, other).

Streambed material throughout culvert: A yes indicates at least one inch in depth of streambed material is present within the entire culvert length, not just in corrugations.

Apron: Horizontal extension of culvert invert with human-made materials.

Road width: Measurement should include shoulders.

Road fill: Measure height of material from top of culvert to top of fill at downstream end.

Plunge pool: *Length to tailout:* Measure length from the downstream culvert end to the plunge pool tailout or downstream control.

OHW width: Ordinary high water width is the average width of the plunge pool measured at the ordinary high water mark. OHW is where the regular stream flow makes a line on the bank marking soil or vegetation with a character distinct from that of the abutting upland. Also defined as the lowest point at which perennial vegetation grows on the streambank.

Max depth: Maximum depth is measured at the deepest point in the plunge pool.

Bankfull width: The stream width measured perpendicular to flow at the stage at which water begins to overflow into the active flood plain. Bankfull width requires a floodplain or a bench not present in many channels. In those cases, use OHW (see above). Enter the average of several bankfull width measurements taken up and/or downstream of the culvert, outside the influence of the culvert.

Culvert span to bankfull width ratio: Divide the culvert span by the stream channel bankfull width. If there are multiple culverts, add the spans of each culvert together then divide by the stream channel bankfull width. Enter as a whole number to 2 decimals, not a percent.

Problem with culvert: Check outfall drop if > 0.24 meters, check slope if equal to or greater than 1.0%, check velocity if no bed material is in the culvert or culvert span to streambed bankfull width ratio is < 0.75, check depth if water depth is < 0.20 meters.

Percent passability: Based on professional judgment. Generally, 1 problem with culvert = 67% passable; 2 = 33% passable; 3 = 0% passable.

Fish Passage Diversion and Screening Inventory (FPDSI) database entry: In order to avoid duplicating data entry, please provide any FPDSI site ID number you have assigned to the site.

Comments: Provide any additional information such as culvert condition, fish use/observation, and habitat quality and site conditions.

ATTACHMENTS - Please attach labeled photographs, including upstream habitat, upstream end of culvert, road, downstream end of culvert, and downstream habitat, with scale. A site map is needed to help verify project location. If available, please attach the Level A assessment and culvert survey profile.

*Level A assessment protocol is described in the *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual*, WDFW, August 2000, available on-line at <http://www.wdfw.wa.gov/hab/engineer/fishbarr.htm>

Expanded Barrier Evaluation Form Instructions

This form will be used by the Fish Passage Team to assess potential benefit of correcting the barrier. Primary factors are the number and type of fish species using the stream, the number and location of other barriers and the quality and amount of upstream habitat. Following are definitions, descriptions, and standards for information to be included in the Expanded Barrier Evaluation Form.

PROJECT INFORMATION

Project Name: Use the landowner's last name followed by the creek name. If more than one site per landowner is evaluated on the same creek, designate each site with a letter, e.g. Franklin – Boulder Creek A. This should correspond to the name used on BEF.

IAC/SRFB Project #: Provided by WDFW when requesting the EBEF, this is used to track projects in IAC/SRFB's PRISM database.

EVALUATOR INFORMATION - Provide contact information for the person(s) completing the EBEF.

WATERSHED INFORMATION

Basin area: This is the area, in square miles, that drains into this tributary upstream from the project.

Amount of habitat: Length of potential fish-bearing habitat, in meters, that would be made available by barrier correction.

Barrier inventory: This is an inventory conducted using WDFW's *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual*, WDFW, August 2000. It may cover a county or watershed, and be road- or stream-based.

Known upstream and downstream barriers: Describe known upstream and downstream barriers. Indicate available site ID numbers and whether they are partial or total barriers. Discuss any scheduled corrections and time frames. List information source.

Stream survey: Indicate if the stream has been walked to check for other barriers. If data are available, include with this form.

PI: If a stream survey has been done according to WDFW protocol and a Priority Index # calculated, check yes and provide the PI number.

FISH SPECIES/USE

Species present at the site: Check the box next to the species documented at the site. Include source of information.

Current fish use: Describe fish use upstream and downstream from the barrier; include information source.

Potential fish use: Describe which fish species and life stages would be expected to use the habitat made accessible by the project.

Habitat description: Describe habitat quality (canopy and instream cover, channel stability and complexity, spawning gravel quality and quantity, off-channel areas, human alterations, etc.) upstream and downstream from the project, and include information source.

Correction Analysis Form Instructions

This will be completed for projects determined to be of potential high benefit to fish resources based on the information provided in BEF and EBEF. The completed forms will be used to develop a prioritized list of projects to be presented to DNR for potential funding.

SITE INFORMATION

Project Name: The landowner's last name followed by the creek name. If more than one site per landowner is evaluated on the same creek, designate each site with a letter, e.g. Franklin – Boulder Creek A. Should correspond to name used on BEF/EBEF.

IAC/SRFB Project #: Provided by WDFW when requesting the CAF, this is used to track projects in IAC/SRFB's PRISM database.

Bankfull width: The stream width measured perpendicular to flow at the stage at which water begins to overflow into the active flood plain. Bankfull width requires a floodplain or a bench not present in many channels. In those cases, use Ordinary High Water (OHW). OHW is where the regular stream flow makes a line on the bank marking soil or vegetation with a character distinct from that of the abutting upland. Also defined as the lowest point at which perennial vegetation grows on the streambank. Enter the average of several bankfull width measurements taken up and/or downstream of the culvert, outside the influence of the culvert.

Utilities crossing: Include any water, gas, phone or electrical utilities at the crossing to be affected by project construction.

Road fill at downstream end: Measure height of material from top of culvert to top of fill at downstream end.

Road width: Measurement should include shoulders.

Road description/condition: Provide a brief description of the road surface, use, condition, etc.

EVALUATOR INFORMATION - Provide contact information for the person(s) completing the CAF.

UPSTREAM HABITAT/CHANNEL DESCRIPTION

Approximate channel slope: This is measured outside of the culvert influence.

Streambed material: Identify the size and type of bed material present. Categorize it as: fines, sand, gravel, cobbles, boulders, bedrock etc.

Additional information: Provide any additional upstream information that may be important to the project.

DOWNSTREAM HABITAT/CHANNEL DESCRIPTION

Approximate channel slope: This is measured outside of the culvert influence.

Additional information: Provide any additional upstream information that may be important to the project.

CORRECTION OPTIONS AND PREFERRED ALTERNATIVE

Options to consider: The purpose of this section is to provide the sponsor some guidance on the intended fix. Most small forest landowner projects should be relatively straightforward – however each site is different.

Preferred alternative: Describe the recommended correction and site-specific concerns to be addressed during design and construction.

COST ESTIMATES

Rough cost estimate: Provide estimated costs for correction options listed above. Costs should be based on cost estimate templates, provided separately, for culverts, bottomless arch culverts, and bridges. Attach the corresponding completed template for each estimate. These represent roughly approximate costs; actual costs may vary depending on specifications identified during final project design.